Analytical Laboratory

13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: **J11050308**

Customer Name(s): Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Jason C Perkins Phone: 980-875-5348

Report Authorized By: (Signature) Digitally signed by jay perkins DN: cn=jay perkins, o=Analytical Lab, ou, email=jay.perkins@duke-energy.com, c=US Date: 2011.06.08 14:46:51 -04'00'

Date: 6/8/2011

Program Comments:

FGD BiMonthly Sampling

The dissolved Se on Bioreactor 1 Inf was approximatley 100 ug/L higher than the total Se. All QC was valid. Was there some change in the collection of these samples…

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with an "X" or "1" indicate a deviation from the method quality system or quality control requirement. All results are reported on a dry weight basis unless otherwise noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2011010916	BELEWS	25-May-11 7:30 AM	W. B. WORKMAN	FGD Purge Eff
2011010917	BELEWS	25-May-11 7:35 AM	W. B. WORKMAN	EQ Tank Eff
2011010918	BELEWS	25-May-11 7:40 AM	W. B. WORKMAN	BioReactor 1 Inf
2011010919	BELEWS	25-May-11 7:45 AM	W. B. WORKMAN	BioReactor 2 Inf
2011010920	BELEWS	25-May-11 7:50 AM	W. B. WORKMAN	BioReactor 2 Eff
2011010921	BELEWS	17-May-11 8:30 AM	L.DAVIS	Filter Blk
2011010922	BELEWS	17-May-11 8:30 AM	L.DAVIS	TRIP BLANK

7 Total Samples

Technical Validation Review

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).	☑ Yes	☐ No
All Results are less than the laboratory reporting limits.	☐ Yes	☑ No
All laboratory QA/QC requirements are acceptable.	☑ Yes	☐ No
The Vendor Laboratories have been qualified by the Analytical Laboratory	Yes	

Report Sections Included:

- ☑ Job Summary Report
- ☑ Sample Identification
- ☑ Technical Validation of Data Package
- ☑ Analytical Laboratory Certificate of Analysis
- ☐ Analytical Laboratory QC Report
- ☑ Sub-contracted Laboratory Results
- ☐ Customer Specific Data Sheets, Reports, & Documentation
- ☐ Customer Database Entries
- ☐ Test Case Narratives
- ☑ Chain of Custody
- ☐ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: Mary Ann Ogle Date: 6/8/2011

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J11050308

Site: FGD Purge Eff **Sample #: 2011010916**
Collection Date: 25-May-11 7:30 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
MERCURY (COLD VAPOR) IN WATER							
Mercury (Hg)	**202**	ug/L		5	EPA 245.1	27-May-11 15:27	TLINN
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**142**	mg/L		0.5	EPA 200.7	06-Jun-11 10:07	MHH7131
DISSOLVED METALS BY ICP-MS							
Selenium (Se)	**1210**	ug/L		10	EPA 200.8	02-Jun-11 15:03	KRICHAR
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**159**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Chromium (Cr)	**265**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Copper (Cu)	**223**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Nickel (Ni)	**256**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Selenium (Se)	**4470**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Silver (Ag)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:34	KRICHAR
Zinc (Zn)	**398**	ug/L		20	EPA 200.8	06-Jun-11 12:34	KRICHAR
SELENIUM SPECIATION							
Vendor Parameter	**Complete**				V_AS&C		
TOTAL DISSOLVED SOLIDS							
TDS	**840**	mg/L		10	SM2540C	27-May-11 14:10	CLEEMAN

Site: EQ Tank Eff **Sample #: 2011010917**
Collection Date: 25-May-11 7:35 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
MERCURY (COLD VAPOR) IN WATER							
Mercury (Hg)	**152**	ug/L		2.5	EPA 245.1	27-May-11 15:29	TLINN
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**143**	mg/L		0.5	EPA 200.7	06-Jun-11 10:19	MHH7131
DISSOLVED METALS BY ICP-MS							
Selenium (Se)	**1010**	ug/L		10	EPA 200.8	02-Jun-11 15:07	KRICHAR
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**144**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR
Chromium (Cr)	**241**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR
Copper (Cu)	**203**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR
Nickel (Ni)	**238**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR

Certificate of Laboratory Analysis

Order # J11050308

Site: EQ Tank Eff — **Sample #: 2011010917**
Collection Date: 25-May-11 7:35 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP-MS							
Selenium (Se)	**4110**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR
Silver (Ag)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:29	KRICHAR
Zinc (Zn)	**358**	ug/L		20	EPA 200.8	06-Jun-11 12:29	KRICHAR

Site: BioReactor 1 Inf — **Sample #: 2011010918**
Collection Date: 25-May-11 7:40 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**148**	mg/L		0.5	EPA 200.7	06-Jun-11 10:15	MHH7131
DISSOLVED METALS BY ICP-MS							
Selenium (Se)	**1240**	ug/L		10	EPA 200.8	02-Jun-11 15:10	KRICHAR
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Chromium (Cr)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Copper (Cu)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Nickel (Ni)	**20.4**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Selenium (Se)	**1110**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Silver (Ag)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:25	KRICHAR
Zinc (Zn)	**< 20**	ug/L		20	EPA 200.8	06-Jun-11 12:25	KRICHAR
SELENIUM SPECIATION							
Vendor Parameter	**Complete**				V_AS&C		

Site: BioReactor 2 Inf — **Sample #: 2011010919**
Collection Date: 25-May-11 7:45 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**145**	mg/L		0.5	EPA 200.7	06-Jun-11 10:11	MHH7131
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Chromium (Cr)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Copper (Cu)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Nickel (Ni)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Selenium (Se)	**166**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Silver (Ag)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 12:20	KRICHAR
Zinc (Zn)	**< 20**	ug/L		20	EPA 200.8	06-Jun-11 12:20	KRICHAR

Certificate of Laboratory Analysis

Order # J11050308

Site: BioReactor 2 Eff — **Sample #: 2011010920**
Collection Date: 25-May-11 7:50 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
MERCURY (COLD VAPOR) IN WATER							
Mercury (Hg)	**< 1**	ug/L		1	EPA 245.1	27-May-11 15:32	TLINN
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**147**	mg/L		0.5	EPA 200.7	06-Jun-11 10:23	MHH7131
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**< 5**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Chromium (Cr)	**< 5**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Copper (Cu)	**< 5**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Nickel (Ni)	**< 5**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Selenium (Se)	**7.77**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Silver (Ag)	**< 5**	ug/L		5	EPA 200.8	06-Jun-11 11:49	KRICHAR
Zinc (Zn)	**< 10**	ug/L		10	EPA 200.8	06-Jun-11 11:49	KRICHAR
SELENIUM SPECIATION							
Vendor Parameter	**Complete**				V_AS&C		

Site: Filter Blk — **Sample #: 2011010921**
Collection Date: 17-May-11 8:30 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
DISSOLVED METALS BY ICP-MS							
Selenium (Se)	**< 2**	ug/L		2	EPA 200.8	02-Jun-11 15:13	KRICHAR

Site: TRIP BLANK — **Sample #: 2011010922**
Collection Date: 17-May-11 8:30 AM — Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP							
Boron (B)	**< 0.05**	mg/L		0.05	EPA 200.7	06-Jun-11 10:03	MHH7131
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Chromium (Cr)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Copper (Cu)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Nickel (Ni)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Selenium (Se)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Silver (Ag)	**< 1**	ug/L		1	EPA 200.8	06-Jun-11 11:44	KRICHAR
Zinc (Zn)	**< 2**	ug/L		2	EPA 200.8	06-Jun-11 11:44	KRICHAR
SELENIUM SPECIATION							

Certificate of Laboratory Analysis

Order # J11050308

Site: TRIP BLANK **Sample #: 2011010922**

Collection Date: 17-May-11 8:30 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
SELENIUM SPECIATION							
Vendor Parameter	**Complete**				V_AS&C		

APPLIED SPECIATION AND CONSULTING, LLC

18804 Northcreek Parkway Bothell, WA, 98011
Tel: (425) 483-3300 Fax: (425) 483-9818
www.appliedspeciation.com

June 2, 2011

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078
(704) 875-5245

Project: Belews - FGD WWTS (2011, Bi-Weekly Sampling) (LIMS # J11050308)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation analysis on May 26, 2011. The samples were received in a sealed cooler at 2.2^{o}C on May 27, 2011. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078

Project: Belews - FGD WWTS (2011, Bi-Weekly Sampling) (LIMS # J11050308)

June 2, 2011

1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on May 26, 2011. The samples were received on May 27, 2011 in a sealed container at 2.2^{o}C.

The samples were received in a laminar flow clean hood void of trace metals contamination and ultra-violet radiation. Upon reception, the samples were designated discrete sample identifiers. An aliquot of each sample was filtered (0.45µm) and these filtrates were stored in a secure, monitored cryofreezer (maintained at a temperature of -80^{o}C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS).

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-DRC-MS Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into a sealed autosampler vial. No further sample preparation was performed as any chemical alteration of the samples may shift the equilibrium of the system resulting in changes in speciation ratios.

3. Sample Analysis

All sample analysis is precluded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of each analytical day. All calibration curves, associated with each species of interest, are

standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimal interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-DRC-MS All samples for selenium speciation analysis were analyzed by ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS) on May 31, 2011. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic (pH > 7) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a specific reactive gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

4. Analytical Issues

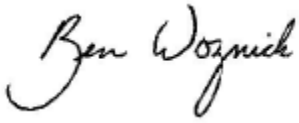
The overall analyses went very well and no analytical issues were encountered. All sample results have been corrected in accordance with the continuing calibration verification recoveries to account for perceived instrument drift. All quality control parameters associated with these samples were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,



Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Selenium Speciation Results for Duke Energy
Project Name: Belews - FGD WWTS (2011, Bi-Weekly Sampling)
Contact: Jay Perkins
LIMS #J11050308

Date: June 2, 2011
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Unknown Se Species (n)
FGD Purge Eff	19.3	1140	ND (<3.7)	ND (<3.4)	ND (<3.4)	0 (0)
BioReactor 1 Inf	4.28	1170	ND (<0.94)	ND (<0.86)	ND (<0.86)	0 (0)
BioReactor 2 Eff	ND (<0.90)	6.31	ND (<0.94)	ND (<0.86)	ND (<0.86)	0 (0)
Metals Trip Blk	ND (<0.18)	ND (<0.15)	ND (<0.19)	ND (<0.17)	ND (<0.17)	0 (0)

All results reflect the applied dilution and are reported in µg/L
ND = Not detected at the applied dilution
SeCN = Selenocyanate
MeSe(IV) = Methylseleninic acid
SeMe = Selenomethionine
Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS
n = number of unknown Se species observed

Selenium Speciation Results for Duke Energy
Project Name: Belews - FGD WWTS (2011, Bi-Weekly Sampling)
Contact: Jay Perkins
LIMS #J11050308

Date: June 2, 2011
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Quality Control Summary - Preparation Blank Summary

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL*	eMDL 10x	eMDL 50x	eMDL 200x
Se(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.018	0.18	0.90	3.6
Se(VI)	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.15	0.73	2.9
SeCN	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.19	0.94	3.7
MeSe(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.17	0.86	3.4
SeMe	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.17	0.86	3.4

eMDL = Estimated Method Detection Limit
*Please see narrative regarding eMDL calculations

Quality Control Summary - Certified Reference Materials

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	9.43	98.6
Se(VI)	LCS	9.48	9.11	96.1
SeCN	LCS	8.92	8.80	98.6
MeSe(IV)	LCS	6.47	6.34	98.0
SeMe	LCS	9.32	9.18	98.5

Selenium Speciation Results for Duke Energy
Project Name: Belews - FGD WWTS (2011, Bi-Weekly Sampling)
Contact: Jay Perkins
LIMS #J11050308

Date: June 2, 2011
Report Generated by: Ben Wozniak
Applied Speciation and Consulting, LLC

Quality Control Summary - Matrix Duplicates

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	Batch QC	8.16	7.72	7.94	5.5
Se(VI)	Batch QC	0.92	ND (<0.73)	NC	NC
SeCN	Batch QC	ND (<0.94)	ND (<0.94)	NC	NC
MeSe(IV)	Batch QC	ND (<0.86)	ND (<0.86)	NC	NC
SeMe	Batch QC	ND (<0.86)	ND (<0.86)	NC	NC

ND = Not detected at the applied dilution
NC = Value was not calculated due to one or more concentrations below the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	Batch QC	278.0	317.7	111.4	278.0	317.7	111.4	0.0
Se(VI)	Batch QC	252.3	248.6	98.6	252.3	249.9	99.1	0.5
SeCN	Batch QC	228.8	175.5	76.7	228.8	175.4	76.7	0.0

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Page 1 of 2

DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

Analytical Laboratory Use Only

ORDER# J1050308 | MATRIX: OTHER | Samples Originating From | NC ✓ SC ___

Logged By cpk | Date & Time 5-26-11

SAMPLE PROGRAM: Water ___ Ground ___ NPDES ___ Drinking Water ___ UST ___ RCRA Waste ___

Ver PO AS&C

Ver PO#133241

0.9 Cooler Temp (C)

Customer must Complete

1) Project Name: Belews - FGD WWTS (2011, Bi-Weekly Sampling) | 2) Phone No:

2) Client: Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson ** | 4) Fax No:

5) Business Unit: | 6) Process: | Mail Code:

8) Oper. Unit: | 9) Res. Type: | 10) Reso. Center:

MR #

Customer to complete all appropriate non-shaded areas.

Sampling conducted: 2nd and 4th Wednesday

Customer to complete appropriate columns to right

LAB USE ONLY 11 Lab ID	Se Speciation Bottle ID	13 Sample Description or ID	Date	Time	Signature	17 Comp.	18 Grab	TDS	Hg - 245.1	Metals*	Se, soluble	Se, speciation - vendor to AS&C (important to place filled bottle back into both baggies)
		15 Preserv.: 1=HCL 2=H_2SO_4 3=HNO_3 4=Ice 5=None						4	3,4	4	3,4	4
		16 Analyses Required										
2011009168	B11168	FGD Purge Eff	5/25/11	7:30A	W. Workman			1	1	1	1	1
917		EQ Tank Eff.		7:35A					1	1	1	
918	B11511	BioReactor 1 Inf		7:40A						1	1	1
919		BioReactor 2 Inf		7:45A						1		
920	B11606	BioReactor 2 Eff		7:50A					1	1		1
921		Filter Blk	5/17	0830	R. Haws						.1	
922	B10450	Metals Trip Blk	5/17	0830	R. Haws					1		1

Customer to sign & date below - fill out from left to right.

1) Relinquished By: W Workman	Date/Time: 5-25-11 15:00hrs	2) Accepted By: V A Sigmon	Date/Time: 5/26/11 0900
3) Relinquished By:	Date/Time:	4) Accepted By:	Date/Time: 5/26/11
5) Relinquished By:	Date/Time:	6) Accepted By:	Date/Time:
A 7) Relinquished By: cpk	Date/Time: 5-26-11 1300	8) Accepted By:	Date/Time:
A 9) Seal/Locked By: cpk	Date/Time: 5-26-11	10) Seal/Lock Opened By: Nancy Cullison	Date/Time: 5/27/11 9.15 Temp 2.3°C
11) Seal/Locked By:	Date/Time:	12) Seal/Lock Opened By:	Date/Time:

Comments

* Metals=As, Ag, B, Cu, Cr, Ni, Se, Zn thomas.d.johnson@siemens.com

Customer, IMPORTANT! Please indicate desired turnaround.

22 Requested Turnaround

14 Days ___
6-5-11
*7 Days ___
*48 Hr ___
*Other ___
* Add. Cost Will Apply

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy SM
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Analytical Laboratory Use Only

ORDER# J1050308 | MATRIX: OTHER | Samples Originating From NC ✓ SC ___
Logged By cpk | Date & Time 5-26-11
SAMPLE PROGRAM: Water ___ Ground ___ NPDES ___ Drinking Water ___ UST ___ RCRA Waste ___
Cooler Temp (C): 0.9
AS&C PO#133241

[19] Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB, COPY to CLIENT

Customer must Complete

[1] Project Name: Belews - FGD WWTS (2011, Bi-Weekly Sampling)		[2] Phone No:
[2] Client: Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson **		[4] Fax No:
[5] Business Unit:	[6] Process:	Mail Code:
[8] Oper. Unit:	[9] Res. Type:	[10] Reso. Center:

MR #

Customer to complete all appropriate non-shaded areas.

Sampling conducted: 2nd and 4th Wednesday

[15] Preserv.: 1=HCL 2=H_2SO_4 3=HNO_3 4=Ice 5=None

[16] Analyses Required

LAB USE ONLY [11] Lab ID	Se Speciation Bottle ID	[13] Sample Description or ID	Date	Time	Signature	[17] Comp.	[18] Grab	TDS	Hg - 245.1		Metals*	Se, soluble						Se, speciation - vendor to AS&C (Important to place filled bottle back into both baggies)					
									4	3,4		4	3,4					4					
20110916	B11168	FGD Purge Eff	5/25/11	7:30A	W. Workman			1	1		1	1						1					
917		EQ Tank Eff.		7:35A					1		1	1											
918	B11511	BioReactor 1 Inf		7:40A							1	1						1					
919		BioReactor 2 Inf		7:45A							1												
920	B11606	BioReactor 2 Eff		7:50A					1		1							1					
921		Filter Blk	5/17	0830	R. Haws							1											
922	B10450	Metals Trip Blk	5/17	0830	R. Haws						1							1					

Customer to complete appropriate columns to right.

Customer to sign & date below - fill out from left to right.

	Date/Time		Date/Time
1) Relinquished By: W. Workman	5-25-11 15:00 hrs	2) Accepted By: V A Sigmon	5/26/11 0900
3) Relinquished By		4) Accepted By	5/26/11
5) Relinquished By		6) Accepted By:	
A 7) Relinquished By: cpk	5-26-11 1300	8) Accepted By:	
A 9) Seal/Locked By: cpk	5-26-11	10) Seal/Lock Opened By	
11) Seal/Locked By		12) Seal/Lock Opened By	

Comments

* Metals=As, Ag, B, Cu, Cr, Ni, Se, Zn thomas.d.johnson@siemens.com

Customer, IMPORTANT! Please indicate desired turnaround.

[22] Requested Turnaround

14 Days ___
*7 Days 6-5-11
*48 Hr ___
*Other ___
* Add. Cost Will Apply